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10 March 2022

Victor Douglas
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105

Subject: Air Products' Comments on Draft Regulation 13, Rule 5: Petroleum Refinery Hydrogen Plants

Mr. Douglas:

Air Products is a global, Fortune 500 company that supplies atmospheric, process, medical and specialty gases and process equipment serving a diverse range of industries, including primary metals, refining, electronics, food, and glass sectors, as well as healthcare and many other general manufacturing industries. We are the world's largest merchant hydrogen producer, serving bitumen upgrading and oil refining operations around the world.

Hydrogen is critical to produce cleaner transportation fuels. It lowers sulfur in fuels and the corresponding sulfur dioxide (SOx), which causes acid rain. Cleaner fuels also enable catalytic converters to more effectively remove other pollutants from transportation fuels such as nitrogen oxides (NOx), particulate matter and volatile organic compounds (VOCs), which cause respiratory problems. Hydrogen also helps conserve natural resources by enabling refiners to increase the amount of fuel that can be produced from every barrel of crude oil.

Air Products welcomes the opportunity to offer comments to the Bay Air Quality Management District (BAQMD) on its 2022 updated draft Regulation 13, Rule 5: Petroleum Refinery Hydrogen Plants ("Rule 13-5"). We currently own/operate several

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hydrogen plants located in the Martinez area in support of refinery clean fuels operations.

Air Products has several comments/concerns with the recent updated proposed draft Rule 13-5. Below we have outlined these for your consideration:

SUMMARY COMMENTS:

Concerns with Existing Regulation Draft Language

- ***Air Products believes the definition of Atmospheric Vent provided in proposed regulation 13-5 is problematic to the specific intent of the regulation.***
- ***Air Products would like to identify for BAAQMD consideration several issues created in section 13-5-401 – Control Device Requirements for Industrial Hydrogen Plants.***
- ***Air Products asks the BAAQMD to consider the elimination of atmospheric vent monitoring requirements for those vent streams committed to being sent to a control device.***
- ***Air Products asks the BAAQMD to consider reduced monitoring requirements for those infrequently used atmospheric vents.***
- ***Air Products requests additional rule clarity concerning the APCO approved sampling point for the purpose of emission testing of atmospheric vents.***

DETAILED DISCUSSION of COMMENTS:

Concerns with Existing Regulation Draft Language

1. ***Air Products believes the definition of Atmospheric Vent provided in proposed regulation 13-5 is problematic to the specific intent of the regulation.***

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Environmental regulations are most effective when written in very clear and concise language to avoid any potential errant interpretations. Every effort should be made in the rule making process to address and clarify the regulation language prior to it potentially being adopted. It is generally recognized that these regulations once adopted will likely be critically reviewed in the legal system and therefore every effort should be proactively made to clarify and remove any vague and confusing interpretations.

The proposed Rule 13-5 states in section 13-5-101 that the purpose of the rule is "to limit total organic compounds (TOC) emissions - including methane - from industrial hydrogen plants." This would seem to indicate the intention of this regulation is to only be concerned with TOC emissions including methane.

However, the definition of Atmospheric Vent proposed in section 13-5-202 does not limit itself to those vent streams which have TOC, including methane, present.

> **Atmospheric Vent:** An opening where a gas or gasses are continuously or periodically discharged during hydrogen plant operations. Atmospheric vents include openings where a gas or gasses are discharged directly to the atmosphere. For the purposes of this Rule, an atmospheric vent may be physically located in any portion of an industrial hydrogen plant.

Air Products believes the BAAQMD should take this opportunity to clarify the atmospheric vent definition. For the purpose of this rule and confirming the stated intention of the rule, atmospheric vents of concern are only those containing total organic emissions, including methane.

The current broad definition of an atmospheric vent seems to unintentionally capture any hydrogen plant atmospheric vent

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regardless of the presence of TOC emission, including methane, in the gas stream.

2. ***Air Products would like to identify for BAAQMD consideration several issues created in section 13-5-401 – Control Device Requirements for Industrial Hydrogen Plants.***

   It is apparent in the drafting of Section 13-5-401, the BAAQMD assumed that each individual hydrogen plant having to comply with this rule would construct and implement is own control device. In other words, if a hydrogen plant owner operated multiple hydrogen plant and decided a flare was the best control device it would appear to be the BAAQMD's intention that a separate flare system would be installed at each hydrogen plant instead of combining the multiple hydrogen plants flare needs to a single dedicated flare, minimizing the environmental impacts multiple flares constructed and operated in an area would create.

   Multiple hydrogen plants operating in a refinery setting do not all follow the same maintenance shutdown and repair schedule. Most hydrogen plans in a refinery setting will undergo a major maintenance shutdown once every 3-5 years.

   Construction of an APCO approved control device/flare can not begin until the approved Authority to Construct (ATC) has been issued by the BAAQMD.

   Section 13-5-401.2 states that once the ATC has been issued construction must begin during the next scheduled shutdown and no later than two years following the issuance of the ATC.

   As noted above these hydrogen plants undergo a major maintenance outage once every 3-5 years. The planning and scheduling for them starts a year in advance. The current rule language would require a hydrogen plant to start construction at

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the next outage following the issuance of the ATC. In other words if the ATC was issued this week and the hydrogen plant had a schedule outage the following week, they would be in violation of the rule for not stating construction on the control device.

Section 13-5-401.3 requires within one year of starting construction of the control device the owner and/or operator shall commence operation of the control device. This is challenging but feasible when you are only considering the option that each hydrogen plant has its own dedicate control device but is impossible when the intent is to send multiple hydrogen plant vent streams to a common dedicated flare which will minimize the environmental impacts of constructing and operating multiple flare systems.

Air Products acknowledges the BAAQMD is under public pressure to implement hard and fast regulatory deadlines; however, practical consideration needs to be given to the complexity, safety and required operational timing to install control devices/flares. This is especially necessary in a situation where many atmospheric vent locations in multiple operating hydrogen plants are being designed and sent to a single flare in an effort to control the negative environmental impacts of operating multiple independent flares.

Air Products encourages the BAAQMD to work collaboratively and openly with those facilities installing abatement devices to allow for the safe and timely installation of these complex systems. This process could provide oversight for the timely installation of these abatement devices, allow for public to be updated on the installation of these devices and provide a mechanism to deal with unforeseen conditions or issues which may arise.

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3. ***Air Products asks the BAAQMD to consider the elimination of atmospheric vent monitoring requirements for those vent streams committed to being sent to a control device.***

   The monitoring requirements outlined in section 13-5-501 are very costly and intended to ensure that those atmospheric vents which will continue to operate remain below the Rule's stated emission limit of 15 pounds per day and 300 PPM by volume of TOC expressed as methane. If an atmospheric vent exceeds the stated emission limit it is required to be sent to a control device.

   To install the required monitoring within 1 year of rule adoption on those atmospheric vents which are committed to being sent to a control device is unnecessary, expensive and a waste of engineering time and resources.

   We encourage the BAAQMD to either change the time for installing required atmospheric vent monitoring from 1 year to until the emission limits become effective, which may be six years from when the rule is adopted or provide an option for a hydrogen plant that commits to installing a control device the ability to identify which atmospheric vents will be sent to the control device when constructed and exempt them from the unnecessary monitoring requirements.

4. ***Air Products would like the BAAQMD to consider reduced monitoring requirements for those infrequently used atmospheric vents.***

   As previously mentioned, the monitoring requirements outlined in section 13-5-501 are very costly and intended to ensure that those atmospheric vents which will continue to operate remain below the Rules stated emission limit of 15 pounds per day and 300 PPM by volume of TOC expressed as methane.

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There exist certain atmospheric vents in hydrogen plants that are only used on an infrequent basis and for a specific purpose. An example is the LTS vent which is only used during catalyst replacement activities (3-5 years) and only for a short period of time (1-3 days) to activate the new catalyst. It is costly, time consuming and not very practical to require these infrequently used vents to follow the daily TOC monitoring requirements outlined in Section 13-5-501.

We ask the BAAQMD to allow for a case-by-case exemption from of the daily monitoring requirements for infrequently used atmospheric vents which receive APCO approval.

5. ***Air Products requests additional rule clarity concerning the APCO approved sampling point for the purpose of emission testing of atmospheric vents.***

Section 13-5-501.4 states:

> *By the next turnaround and no later than five years, the owner and/or operator of an industrial hydrogen plant shall install, operate, and maintain in good working order, a sampling point approved by the APCO for the purpose of testing emissions from each atmospheric vent. The owner and/or operator of an industrial hydrogen plant shall provide a piping and instrumentation diagram for each atmospheric vent and any information deemed necessary by the APCO to approve the sampling point.*

Air Products suggests that the language “by the next turnaround” be eliminated. The current rule language would require a hydrogen plant to install operate and maintain an APCO approved sample point at the next outage following issuance of the ATC. In other words if the ATC was issued this week and the hydrogen plant had a schedule outage the following week, they would be in violation of the rule for not installing an APCO approved sample point.

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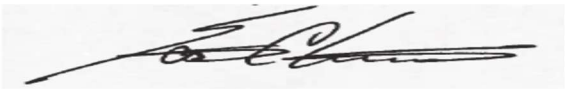
We also have concerns with the APCO approval process as stated. Is it the intention for the BAAQMD to follow the Authority to Construct (ATC) process for these APCO approvals or is there some other approval process the BAQMD has in mind?

For the required installation of "a sampling point approved by the APCO for the purpose of testing emissions," is it the intention of the BAAQMD to follow the BAAQMD MOP IV – Source Test Policy and Procedures for these sample points?

Not having a clear understanding of what the BAAQMD expectation is for these APCO approved sample locations required for emission testing makes it very difficult to understand the expected costs, time and engineering required to comply with the Rule.

Air Products appreciates the efforts of the BAAQMD staff and wishes to work cooperatively and collaboratively to assist in the development of regulations that have meaningful benefits and purpose. We would welcome any conversation that BAAQMD staff would be willing to have to review/discuss our comments related to the proposed Regulation 13-5. If you have any questions or require any additional information, please do not hesitate to contact me by email at govertsc@airproducts.com.

Respectfully,



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